

REMARKS

Applicant appreciates the Examiner's thorough examination of the subject application and requests reconsideration of the subject application based on the foregoing amendments and the following remarks.

Claims 1-17 are pending in the subject application. Claims 1-17 stand rejected under 35 §U.S.C. 103. Claims 7, 11 and 14 also were objected to because of identified informalities.

Claims 7, 11 and 14 were amended to only address the Examiner's objections. Claims 18 -25 were added to more distinctly claim Applicant's invention, more specifically to describe the pressure sensitive panel.

CLAIMS 7, 11 & 14

Claims 7, 11 and 14 were objected to because of the informalities identified on page 2 of the above-referenced Office Action.

Claims 7, 11 and 14 were amended as suggested by the Examiner. As such, each of these claims is believed to be in acceptable form.

35 U.S.C. 103 REJECTIONS

Claims 1-17 stand rejected under 35 U.S.C. § 103 as being unpatentable over the cited prior art for the reasons provided on pages 2-4 of the above-referenced Office Action. Because claims were amended in the foregoing amendment, the following discussion may refer to the language of the amended claim(s). However, those amended

features are not considered as being made to overcome the prior art reference because these amendments were made to overcome objections and not to address the within rejections. The following addresses the two specific grounds for rejection provided in the above-referenced Office Action.

Ouellette et al.

Claims 1 and 4 stand rejected as being unpatentable over Ouellette et al. [USP 5,581,243; "Ouellette"] for the reasons provided on pages 2-3 of the above referenced Office Action. As support for the rejection, the above-referenced Office Action refers to figure 1, column 1, lines 45-63 and column 5, lines 4-10 of Ouellette. Applicant respectfully traverses.

Applicant respectfully submits that the above-identified figure 1 and excerpts from columns 1 and 5 of Ouellette do not disclose or teach the present invention but rather mischaracterizes what is being disclosed and taught in Ouellette. As is more specifically detailed below at the time of the invention disclosed in Ouellette, it was not possible to separately determine each position of two areas being touched on a pressure sensitive panel using a divided resistance technique. As such it was not possible to follow or use the typing technique used with conventional keyboards or typewriters. Stated another way, a virtual keyboard embodying such a conventional pressure-sensitive panel cannot be operated or function in the same way as a conventional keyboard (i.e., depressing the shift key and while keeping the shift key depressed also depressing the letter, number or punctuation key at the same time so as to output a capitalized letter or a punctuation mark residing in the upper case mode).

As provided in the enclosed Declaration of Katsuya Nakagawa, conventional pressure-sensitive panels, such as those embodying the divided resistance technique for determining position, are configured and arranged so that only one x position can be determined at a time and only one y-position can be determined at a time. See Declaration, Paragraphs 4-7.

If two or more areas of such a pressure-sensitive panel are pushed at the same time, a single x-position and a single y- position representative of the divide resistances of the two or more areas being pushed is outputted. The electrical configuration of such a pressure-sensitive panel does not allow one to separately determine the two or more areas of the panel being pushed at the same time. See Declaration, Paragraph 8.

With conventional keyboards each of the keys are uniquely identifiable when the key is depressed. Therefore, one can use a conventional typing technique employing the shift key to switch between the lower case and upper case modes or functionalities. In such a conventional typing technique, the shift key is depressed and thereafter, while keeping the shift key depressed, the desired letter, number or punctuation key is depressed corresponding to the upper case character to be outputted, printed, displayed on the screen, etc. See Declaration, paragraphs 8-9.

Because two areas of a conventional pressure-sensitive panel cannot be separately determined when they are pushed at the same time, when a pressure-sensitive panel is employed as a virtual keyboard a different typing technique is used to switch between the lower case and upper case modes or functionalities. In this virtual keyboard technique the area corresponding to the shift key is depressed and released so as to put the virtual keyboard in the upper case mode. Then the area corresponding to

the key for the desired upper case letter or punctuation mark is depressed and released.

If the upper case mode is no longer required, then the area corresponding to the shift key is again depressed and released so as to return the virtual keyboard to the lower case mode. See Declaration, Paragraphs 7-8 and 10-12.

It should be recognized that this one touch at a time virtual keyboard operation is disclosed in the principal reference cited in connection with the prosecution of the Ouellette patent, namely Auer et al. [USP 4,725,694, "Auer"]. See for example, Figure 7 and the discussion at col. 5, lines 1-20 thereof. See also Dunthorn [USP 4,914,624], col. 1, lines 10-55.

As to the alleged teachings or disclosures in Ouellette, the Declaration clearly provides that the discussion cited in column 5 merely describes the one touch process described above. It does not describe at all a process where more than one key of a virtual keyboard or more than one area of a pressure-sensitive panel is pushed at the same time.

The Declaration also clearly indicates that whatever the discussion being referred to in column 1 of Ouellette was intended to convey, it could **not** mean that one could use a conventional typing technique when using a virtual keyboard embodying a conventional pressure-sensitive panel. Stated another way, and contrary to the apparent inference being drawn in the Office Action, a virtual keyboard embodying a conventional pressure-sensitive panel **cannot** be operated or **cannot** function in the same way as a conventional keyboard. See Declaration, paragraphs 14-20.

What also is interesting is that if Ouellette disclosed that more than one area of a pressure-sensitive panel was being touched at a time, then the principal reference cited

against that invention, Auer, could have been clearly distinguished on these grounds alone. Because Auer was not so distinguished during prosecution in Ouellette, nor did the Examiner refer to another reference citing such a teaching, it is clear that Ouellette was not configured so it could sense or determine more than one position if more than one area was pushed or so it could be operated in the same way as a conventional keyboard. In other words, the Examiner is reading something into Ouellette that is **not** there.

As to the "touched the same as" language in column 1, it should be remembered that a stylus or pen also was used to touch pressure-sensitive panels. See for example one of the previously identified patents USP 5,457,454.

The Examiner also has just cited another reference because it allegedly teaches multiple touches at a time. It should be noted that this reference indicates that existing touchpads used in pointing devices are typically **not** capable of sensing multiple simultaneous touches. The device disclosed therein and an alternative prior art device are configured and arranged so that the sensing circuitry scans each of the lines in turn to check for electrical continuity between lines. Thus, such circuitry does not involve outputting positions detected and sent in a time sequence and clearly does not employ the divided resistance technique that is claimed by Applicant.

In sum, the complete prior art of record, does **not** anywhere disclose, teach or suggest, as is taught and disclosed by Applicants, a virtual keyboard embodying a pressure-sensitive panel whereby the position of a second key that is pushed at the same time with a first key can be determined and so a code representative of the pushed combination can be outputted. Rather, and as more clearly explained in the

Declaration, the cited prior art only discloses the well known one touch at a time typing technique for virtual keyboards that embody conventional pressure-sensitive panel at the time Ouellette was filed, not the typing technique used for conventional keyboards.

It is respectfully submitted that claims 1 and 4 are patentable over the cited reference(s) for the foregoing reasons.

Quellette et al. & Dunthorn

Claims 2-3 and 5-17 stand rejected as being unpatentable over Quellette et al. [USP 5,581,243; "Ouellette"] in view of Dunthorn [USP 4,914,624] for the reasons provided on pages 3-4 of the above referenced Office Action. Applicant respectfully traverses.

As indicated in the above discussion, Ouellette does not disclose, suggest or teach Applicant's invention as set forth in either of claims 1 and 4. It also is specifically noted above, that Ouellette does not disclose or teach that a virtual keyboard embodying a conventional pressure-sensitive panel can be operated or function in the same way as a conventional keyboard. It is not possible because of the electrical arrangement or configuration of the conventional pressure-sensitive panel.

As to Dunthorn, this reference discloses a touch-sensitive screen embodying the divide resistance technique for determining positions and which teaches that when two places are touched at the same time, a function for canceling a process etc. is outputted. Applicant respectfully submits that Dunthorn does *not* describe, teach or suggest a process whereby such pushing of two keys is originally directed to input character data represented by the pushed keys. Further, as indicated in Fig. 2 and

column 4 thereof, Dunthorn does not utilize a furthest detected position but rather uses a sudden and large change in detected position to effect the outputting. Such a sudden change occurs when two positions are touched, differing from the present invention in the realization of positions.

It is respectfully submitted that claims 2-3 and 5-17 are patentable over the cited reference(s) for the foregoing reasons.

As provided in MPEP-2145 (XD) a prior art reference that "teaches away" from the claimed invention is significant factor to be considered in determining obviousness. It also is provided therein that the totality of the prior art must be considered, and proceeding contrary to accepted wisdom in the art is evidence of non-obviousness. *In re Hedges*, 783 F.2d 1038, 228 USPQ 685 (Fed. Cir. 1986). It is clear from the foregoing remarks that all of the cited prior art teach way from the present invention.

As the Federal circuit has stated, "[t]he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." *In re Fritch*, 972 F.2d 1260,1266, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992). Obviousness may not be established using hindsight or in view of the teachings or suggestions of the inventor. *Para-Ordance Mfg. v. SGS Importers Int'l, Inc.*, 73 F.2d 1085, 1087, 37 USPQ2d 1237, 1239 (Fed. Cir. 1995).

As stated by the Board Of Patent Appeals and Interferences; "...Before obviousness may be established, the Examiner must show that there is either a suggestion in the art to produce the claimed invention or a compelling motivation based

on sound scientific principles." *Ex Parte Kranz*, 19 U.S.P.Q. 2d 1216, 1218 (BPAI 1990) (emphasis added).

The Federal Circuit also has indicated that a prior art reference that gives only general guidance and is not all that specific as to particular forms of a claimed invention and how to achieve it, may make a certain approach obvious to try, but does not make the invention obvious. *Ex Parte Obukowicz*, 27 USPQ2d 1063, citing *In re O'Farrell*, 853 F.2d 894, 7 USPQ2d 1673,1-681 (Fed. Cir. 1988).

Furthermore, and as provided in MPEP 2143.02, a prior art reference can be combined or modified to reject claims as obvious as long as there is a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Additionally, it also has been held that if the proposed modification or combination would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. Further, and as provided in MPEP-2143, the teaching or suggestion to make the claimed combination and the reasonable suggestion of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). As can be seen from the forgoing discussion regarding the disclosures of the cited references, there is no reasonable expectation of success provided in any of the references that the typing technique for a conventional keyboard can be used with a virtual keyboard. Also, it is clear from the foregoing discussion that the modification suggested by the Examiner would change the principle of operation of the virtual keyboard disclosed in Ouellette from a virtual board typing

technique to the conventional keyboard typing technique. Rather the sole discussion of the present invention and its success is only found in the subject application.

It is respectfully submitted that for the foregoing reasons, claim(s) 1-17 are patentable over the cited reference(s) and satisfy the requirements of 35 U.S.C. §103. As such, these claims are allowable.

CLAIMS 18-25

As indicated above claims 18-25 were added to more distinctly claim Applicant's invention. More particularly, claims 18-23 and 25 were added to more distinctly claim the pressure-sensitive panel used in connection with the virtual keyboard and related method of the present invention. Claim 24 was added to more particularly describe the technique used for detecting the positions in a time sequence. Each of these claims is supported throughout the original filed disclosure, with particular reference to FIGS. 1, 2A, and 2B and pages 4-5 of the subject application.

It is respectfully submitted that the subject application is in a condition for allowance. Early and favorable action is requested.

Applicant believes that additional fees are not required for consideration of the within Response. However, if for any reason a fee is required, a fee paid is inadequate

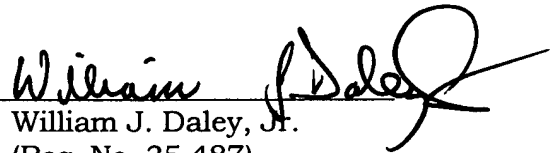
Katsuya Nakagawa
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RESPONSE TO OFFICE ACTION
Page 16

or credit is owed for any excess fee paid, you are hereby authorized and requested to
charge Deposit Account No. **04-1105**.

Respectfully submitted,
EDWARDS & ANGELL, LLP
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Date: November 21, 2001

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Bos2 179793.1

DETAILS OF AMENDMENTS

Please amend the subject application as follows:

IN THE CLAIMS

Amend claims 7, 11 and 14 to read as follows:

7. (~~ADD~~AMENDED) A virtual keyboard comprising:

a display for displaying a keyboard;

a transparent pressure-sensitive panel disposed on the display; and

a processor; ~~and~~

wherein the processor is configured and arranged:

(1) to receive information of positions detected and sent in a time sequence from the pressure sensitive panel, the position information provided including when a special key is first pushed and thereafter when both of the special key and one of a plurality of general keys are pushed at the same time,

(2) to determine a target position using the received position information of when the special key is pushed and when both of the special key and said one general key are pushed, and; ~~and~~

(3) to determine which of the plurality of general keys corresponds to the determined target position.

11. (~~ADD~~AMENDED) A virtual keyboard comprising:

a display for displaying a keyboard;

a transparent pressure-sensitive panel disposed on the display; and

a processor; and

wherein the processor is configured and arranged to:

(1) receive information of positions detected and sent in a time sequence from the pressure sensitive panel, the position information provided including when a special key is first pushed and thereafter when both of the special key and one of a plurality of general keys are pushed at the same time,

(2) determine a target position using the received position information of when the special key is pushed and when both of the special key and said one general key are pushed, including to determine the position of the pushed special key, to determine a furthest returning position using the position information detected and sent in a time sequence when both the special key and the general key are pushed, and to calculate a distance between the special key and the furthest returning position,

(3) determine which of the plurality of general keys corresponds to the determined target position, and

(4) output a code corresponding to the combination of the pushed special key and the determined general key.

14. (~~ADD~~AMENDED) A method for determining a one of a plurality of general keys of a virtual keyboard being pushed in combination with a special key being pushed at the same time, comprising the steps of:

pushing the special key;

pushing both of the special key and the one of the plurality of general keys;

releasing both of the special key and one of the plurality of general keys;

detecting positions in a time sequence from a pressure sensitive panel of the virtual keyboard, the detected positions including when the special key is first pushed and thereafter when both of the special key and the one of the plurality of general keys are pushed at the same time,

determining a target position using the detected positions of when the special key is pushed and when both of the special key and the one of the plurality of general keys are pushed, and

determining which of the plurality of general keys corresponds to the determined target position.

ADD new claims 18 - 25 that read as follows:

18. (ADDED) The virtual keyboard of claim 1, wherein the transparent pressure-sensitive panel is of a type where a position in each of the x and y directions is determined using a divided resistance technique.

19. (ADDED) The virtual keyboard of claim 1, wherein the transparent pressure-sensitive panel includes:

a plurality of resistance wires being arranged to extend in a first direction;

a plurality of resistance wires being arranged to extend in a second direction, the first and second directions being at an angle with respect to each other; and

two pairs of electrodes where the plurality of resistance wires in the first direction extend between and are electrically coupled to one of the pair of electrodes and the

plurality of resistance wires in the second direction extend between and are electrically coupled to the other of the pair of electrodes.

20. (ADDED) The virtual keyboard of claim 7, wherein the transparent pressure-sensitive panel is of a type where a position in each of the x and y directions is determined using a divided resistance technique.

21. (ADDED) The virtual keyboard of claim 7, wherein the transparent pressure-sensitive panel includes:

a plurality of resistance wires being arranged to extend in a first direction;

a plurality of resistance wires being arranged to extend in a second direction, the first and second directions being at an angle with respect to each other; and

two pairs of electrodes where the plurality of resistance wires in the first direction extend between and are electrically coupled to one of the pair of electrodes and the plurality of resistance wires in the second direction extend between and are electrically coupled to the other of the pair of electrodes.

22. (ADDED) The virtual keyboard of claim 11, wherein the transparent pressure-sensitive panel is of a type where a position in each of the x and y directions is determined using a divided resistance technique.

23. (ADDED) The virtual keyboard of claim 11, wherein the transparent pressure-sensitive panel includes:

a plurality of resistance wires being arranged to extend in a first direction;

a plurality of resistance wires being arranged to extend in a second direction, the first and second directions being at an angle with respect to each other; and

two pairs of electrodes where the plurality of resistance wires in the first direction extend between and are electrically coupled to one of the pair of electrodes and the plurality of resistance wires in the second direction extend between and are electrically coupled to the other of the pair of electrodes.

24. (ADDED) The method of claim 14, wherein each of the positions detected and sent in a time sequence from the pressure-sensitive panel is detected using a divided resistance technique.

25. (ADDED) The virtual keyboard of claim 14, wherein the pressure-sensitive panel includes:

a plurality of resistance wires being arranged to extend in a first direction;

a plurality of resistance wires being arranged to extend in a second direction, the first and second directions being at an angle with respect to each other; and

two pairs of electrodes where the plurality of resistance wires in the first direction extend between and are electrically coupled to one of the pair of electrodes and the plurality of resistance wires in the second direction extend between and are electrically coupled to the other of the pair of electrodes.